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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/664,054 | 09/15/2003 | Kevin D. Foust | 58998US002 | 3234 |
| 32692 | 7590 | 02/24/2006 | EXAMINER | |
| 3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427 | | | STAICOVICI, STEFAN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1732 | |
| DATE MAILED: 02/24/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | | |
|------------------------------|------------------------|--|---------------------|--|
| Office Action Summary | Application No. | | Applicant(s) | |
| | 10/664,054 | | FOUST, KEVIN D. | |
| | Examiner | | Art Unit | |
| | Stefan Staicovici | | 1732 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 7-11 and 13-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>11/24/03; 1/31/05</u> . | 6) <input checked="" type="checkbox"/> Other: <u>4/29/05</u> . |

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

Species A; process for marking a thermoplastic substrate by creating a contrast (color change) between said marking and the surrounding area of said thermoplastic substrate (color change);

Species B: process for marking a thermoplastic by ablating said thermoplastic substrate (protrusion forming).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Ms. Eloise J. Maki on February 1, 2006 a provisional election was made with traverse to prosecute the invention of Species A, claims 1-6, 12 and 20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 7-11 and 13-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3 and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 01/45559 A1.

Regarding claim 1, WO 01/45559 A1 teaches the claimed process of laser marking a dental container including, providing a container having an exterior surface and an interior

chamber, the container formed from a thermoplastic material and including a laser enhanced outer layer, and inserting dental restorative material (light curing) into the interior chamber of the container (see pages 4-5). Further, WO 01/45559 A1 teaches that said laser marking does not adversely affect the function of the dental container (see page 7, lines 20-27).

In regard to claim 3, WO 01/45559 A1 teaches laser marking of numbers and numerals (see Figure 1).

Specifically regarding claims 5 and 6, WO 01/45559 A1 teaches a black container (page 6, line 27). It is submitted that a black container inhibits the transmission of light. Further, it is submitted that visible light has a wavelength range of 400-700 nm, hence WO 01/45559 A1 teaches a container that inhibits transmission of light radiation in the range of 400-700 nm (370-530 nm).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6, 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin *et al.* (US Patent No. 5,100,320) in view of Feng *et al.* (US Patent No. 5,977,514).

Martin *et al.* ('320) teach the basic claimed process of marking a dental container including, providing a container having an exterior surface and an interior chamber, the container

formed from a nylon (laser-enhanced) material and including pigments that make the container opaque to light (inhibit the transmission of light radiation of selected wavelengths therethrough) and inserting light curing (radiation-reactive) dental restorative material into the interior chamber of the container (see col. 3, line 67 through col. 4, line 18; col. 4, lines 55-67 and col. 6, line 54 through col. 7, line 6).

Regarding claims 1-4, Martin *et al.* ('320) do not teach forming a marking using laser radiation from a Nd:YAG laser, wherein said mark is a letter or a bar code. However, the use of making a marking using laser radiation is well known as evidenced by Feng *et al.* ('514) who teach using a Nd:YAG laser for marking nylon materials as an alternative to ink marking as a means for identifying products, wherein said mark is a letter or a bar code (see col. 1, lines 9-17 and col. 2, lines 51-54). Therefore, it would have been obvious for one of ordinary skill in the art to use the laser marking of Feng *et al.* ('514) in the process of Martin *et al.* ('320) for a variety of advantages that laser marking provides such as, improved process control, reduced ink waste and ease in modifying the required mark in a short period of time, hence increasing process versatility. Further, it submitted that when laser marking a nylon structure, said structure is not adversely affected by said laser radiation in order for said structure to function as intended, hence it is submitted that the laser marked container of Martin *et al.* ('320) in view of Feng *et al.* ('514) is not adversely affected by the laser radiation.

In regard to claims 5-6, Martin *et al.* ('320) teach adding carbon black as a pigment, hence teaching making the container in a black color (see col. 4, lines 55-60). Further, it is noted that Martin *et al.* ('320) teach adding carbon black in order to stop transmission of light. It is

submitted that visible light has a wavelength range of 400-700 nm, hence Martin *et al.* ('320) teach a container that inhibits transmission of light radiation in the range of 400-700 nm (370-530 nm).

Specifically regarding claim 12, although Martin *et al.* ('320) in view of Feng *et al.* ('514) do not specifically teach marking a plurality of containers, it is well known to mark a plurality of containers when marking a single container is known. It is noted that in In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960), the court held that "mere duplication of parts has no patentable significance unless a new and unexpected result is produced (see MPEP §2144.04(VI)(B)).

Regarding claim 20, although Martin *et al.* ('320) in view of Feng *et al.* ('514) do not specifically teach a Brightness Scaled Contrast of at least 50, it is submitted that the laser mark formed by the process of Martin *et al.* ('320) in view of Feng *et al.* ('514) has a Brightness Scaled Contrast of at least 50 in order for the invention of Martin *et al.* ('320) in view of Feng *et al.* ('514) to function as described, specifically as a marking.

7. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/45559 A1 in view of Feng *et al.* ('514).

WO 01/45559 A1 teaches the basic claimed process as described above.

Regarding claim 2, although WO 01/45559 A1 teaches letter and numeral marking, WO 01/45559 A1 does not teach a bar code marking. However, the use of bar codes as a marking symbol is well known as evidenced by Feng *et al.* ('514) who teach laser marking a bar code and that bar codes and data codes (numerals and letters) are equivalent marking alternatives (see col.

1, lines 9-17). Therefore, it would have been obvious for one of ordinary skill in the art to have marked a bar code as taught by Feng *et al.* ('514) by the laser process of WO 01/45559 A1 because, Feng *et al.* ('514) specifically teach that bar codes and data codes (numerals and letters) are equivalent marking alternatives and also because bar codes provide more information to the end user as to the product, hence providing for an improved product.

In regard to claim 4, although WO 01/45559 A1 teaches laser marking, WO 01/45559 A1 does not teach a Nd:YAG laser. However, the use of Nd:YAG lasers for marking thermoplastic products is well known as evidenced by Feng *et al.* ('514) who teach laser marking a thermoplastic substrate using a Nd:YAG laser (see col. 1, line 66 through col. 2, line 2). Therefore, it would have been obvious for one of ordinary skill in the art to have used a Nd:YAG laser as taught by Feng *et al.* ('514) in the process of WO 01/45559 A1 because of known advantages that a Nd:YAG laser provides such as reduced spot dimensions, increased energy density and also because, Feng *et al.* ('514) who specifically teach laser marking a thermoplastic substrate using a Nd:YAG laser, hence suggesting the use of a Nd:YAG laser in the process of WO 01/45559.

8. Claims 12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/45559 A1.

WO 01/45559 A1 teaches the basic claimed process as described above.

Regarding claim 12, although WO 01/45559 A1 does not specifically teach marking a plurality of containers, it is well known to mark a plurality of containers when marking a single container is known. It is noted that in In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960),

the court held that "mere duplication of parts has no patentable significance unless a new and unexpected result is produced (see MPEP §2144.04(VI)(B)).

In regard to claim 20, although WO 01/45559 A1 do not specifically teach a Brightness Scaled Contrast of at least 50, it is submitted that the laser mark formed by the process of WO 01/45559 A1 has a Brightness Scaled Contrast of at least 50 in order for the invention of WO 01/45559 A1 to function as described, specifically as a marking.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

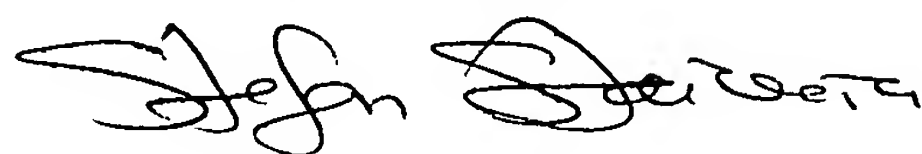
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Colaianni, can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 1732

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD

A handwritten signature in black ink, appearing to read 'Stefan Staicovici', written in a cursive style.

Primary Examiner

2/11/06

AU 1732

February 11, 2006